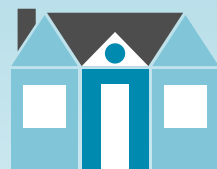


This information is provided in alternative formats for individuals with disabilities on request by calling the Wastewater Treatment Division at 206-684-1280 or 711 TTY.

King County will prepare Brightwater for an earthquake, and you can be prepared, too.

A large earthquake – or even very severe storm – can block road access, cause damage to homes and businesses, and disrupt essential services. Making a few home improvements, having an emergency preparedness plan, and storing supplies for you, your family, and even pets can protect you after a natural disaster until services are



restored. Federal, state, and local agencies provide information and resources to help you get prepared.

Simple improvements can make your home safer:
http://www.fema.gov/hazard/earthquake/eq_before.shtm

Learn how to make a plan and build a disaster kit:
<http://www.metrokc.gov/prepare/preparerespond/prepared.aspx>

Information on specific problems caused by a disaster:
<http://www.metrokc.gov/HEALTH/disaster/index.htm>

Community Emergency Response Team training for citizens who can provide emergency assistance on a community level: <https://www.citizencorps.gov/cert/>

More information about King County's extensive planning for seismic safety at Brightwater can be found at:
<http://dnr.metrokc.gov/wtd/brightwater>.
Or call 206-684-6799 or 711 TTY.

Brightwater

T R E A T M E N T S Y S T E M

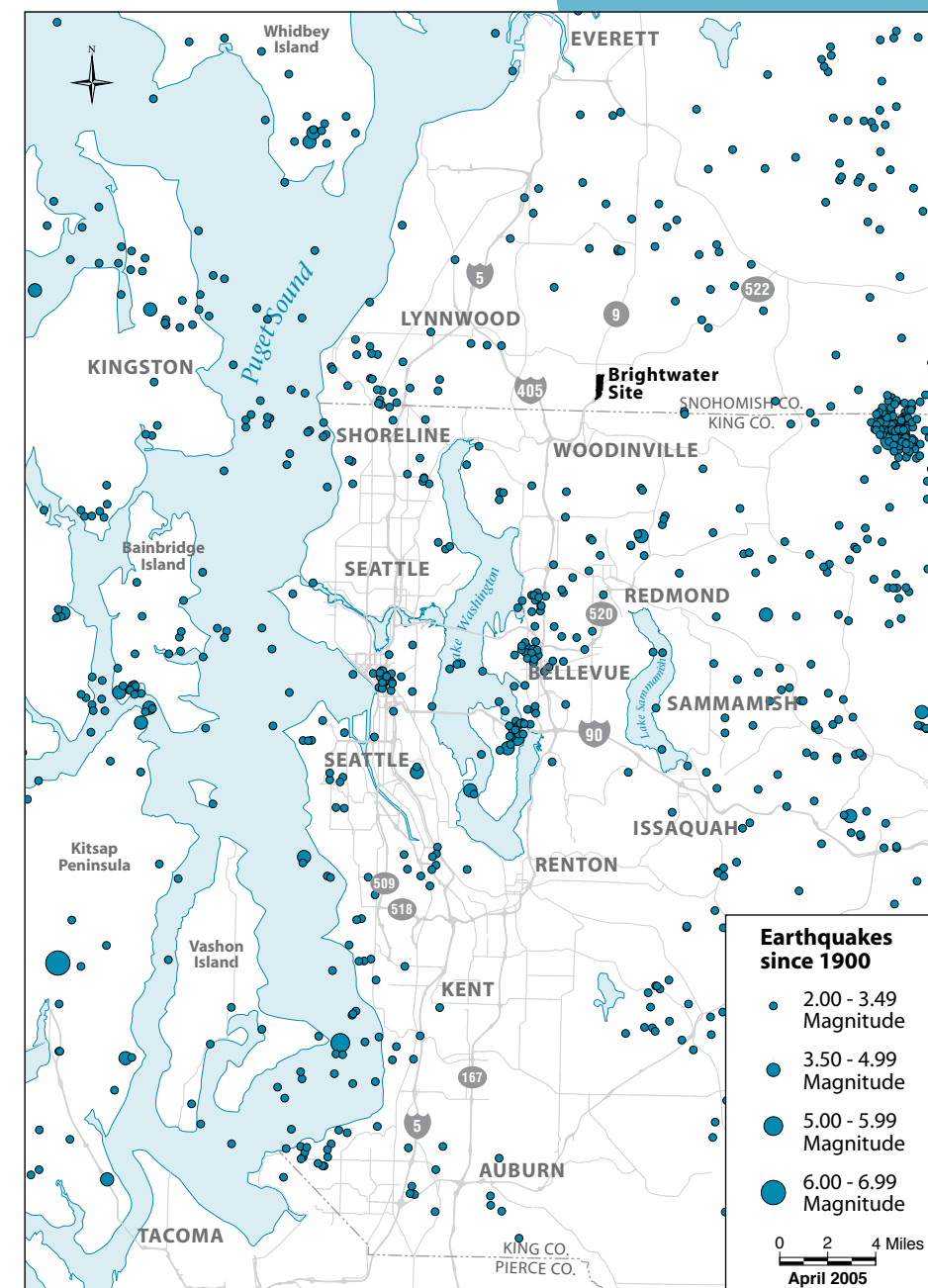
special seismic edition

Puget Sound residents live in a seismically active region. There have been three large earthquakes, and many smaller ones, in the last 60 years. Even so, our region continues to grow as people move here for jobs, education, and the overall quality of life the Pacific Northwest offers.

No area is free from the risk of some natural disaster. Here, we must accept that earthquakes will occur sometime in the future. While we cannot predict when these earthquakes will happen, we can prepare for them by taking measures to protect people and property. We can design residences, commercial buildings, and facilities to withstand seismic activity. We can all develop emergency preparedness plans to use in the aftermath of an earthquake.

In 2003, an extension of the South Whidbey Island Fault was identified on the northern portion of the site selected for the Brightwater Treatment Plant. After this finding, King County conducted investigations and site analysis which exceed studies done for other major regional projects, including some that are close to or run across the Seattle Fault. **In this special bulletin, you will find:**

- A review of King County's investigations at the Highway 9 site.
- An update on findings from King County's recent seismic studies.
- Information about how Brightwater engineers are designing facilities for seismic safety.
- Resources to help you with earthquake preparedness.



This map shows the location and magnitude of earthquakes in the Puget Sound region since 1900 and their proximity to the Brightwater site.

Seismic strength a priority in Brightwater design

Engineers used the seismic findings at the Route 9 site to design facilities to withstand a magnitude 7.3 earthquake centered anywhere in the region – including on the site itself. Conservative factors were applied to the design which even exceed some International Building Code 2003 requirements.

The facility includes the following protections:

- Additional steel reinforcement will increase the strength of water-holding tanks and structures.
- Flexible piping systems will move if the ground shakes, minimizing potential for leaks.
- Additional bracing of pipes and equipment will maintain system integrity during shaking.
- Chemical storage facilities will be separated and will include secondary containment areas to confine chemicals if a leak occurs and to prevent mixing if buildings are damaged.
- Basins will be designed so that individual tanks can be taken off-line until damaged units are repaired.
- If an earthquake or other natural disaster disrupts operations at the Brightwater facility, wastewater will stop coming to Brightwater. King County can:
 - Send flows to the West Point and South Treatment Plants or into storage facilities or pipelines.
 - Run pump stations on emergency generators during power outages.
 - Contain wastewater on site, if necessary.

BRIGHTWATER is designed to protect public health every day of the year – even after a disaster.

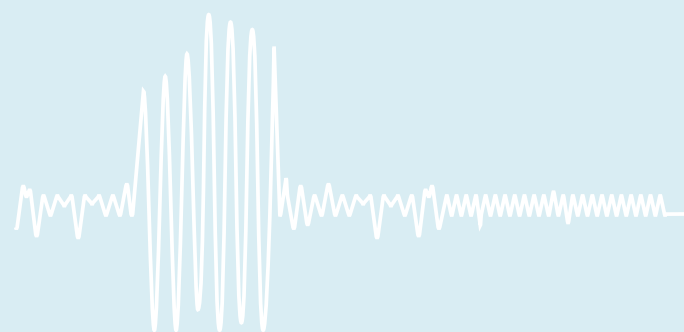
Latest findings: no evidence of active faults under chemical building sites

As required by Snohomish County, King County excavated five seismic trenches in June, July, and August 2006 to assess whether there are earthquake faults at the proposed locations of two chemical storage buildings at the Brightwater Treatment Plant site. The two new buildings will separately store chemicals that should not be mixed. The buildings will be 1200 feet apart and have secondary containment systems to prevent spills. King County committed to move the chemical storage buildings to other locations on the site if active faults were found under the proposed locations. The trenching study was designed to see if that was needed.

The 2003 International Building Code defines an active fault as one that has a historic slip rate of 1 mm/year or more and evidence of having moved within the last 11,000 years, or the Holocene period.

The trenches dug for the south chemical building showed no evidence of faulting since the glaciers retreated from the area about 16,500 years before present time. Trenches for the north chemical building showed very dense soil compacted by this glacial ice.

The team of researchers found no evidence of active faults at either location. They determined that the chemical buildings could be safely built in the proposed locations. A report documenting the findings has been submitted to Snohomish County for review. This report is also available to the public on the Brightwater Web site at <http://dnr.metrokc.gov/wtd/brightwater/sitegeo>.



Trenching studies help engineers design Brightwater facilities

Excavating trenches is just one method that geologists use to study past earthquake and glacial activity at a building site. Scientists can analyze soils in trenches to find evidence of past geologic and seismic activity and determine how and when it occurred. Geotechnical engineers use this information in order to guide building location and design.

King County contractors and a team of geologists and engineering experts conducted trenching studies at the Brightwater Treatment Plant site in 2004 and 2006. In all, seven trenches were excavated on the site. Trenching locations were determined using LIDAR data and proposed building locations, while avoiding underground utilities and nearby waterways.

The first study in October 2004 consisted of two trenches at the north end of the site to learn more about a feature named Lineament 4 by the USGS (United States Geological Survey). As a result of this study, Brightwater engineers increased the seismic design for the facility. This year, five additional trenches at proposed sites for chemical buildings were investigated to meet the requirements of Snohomish County. Results of this investigation indicate no evidence of active faults.

